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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.      | CONFIRMATION NO. |
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| 10/051,084   | 01/22/2002  | Hiroaki Oikawa       | 0378-0387P               | 3438             |
| 2292   | 7590        | 05/18/2004           |                          |                  |
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|  |             |                      | EXAMINER<br>LEE, KYUNG S |                  |
|  |             |                      | ART UNIT<br>2832         | PAPER NUMBER     |

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/051,084

Applicant(s)

OIKAWA, HIROAKI

Examiner

Richard K. Lee

Art Unit

2832

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 5, 7 and 8 is/are rejected.
- 7) ☒ Claim(s) 2-3 and 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by (4,211,497).

Montgomery teaches a keyboard comprising:

a plurality of key switches arranged in a matrix and each including a contact (figs. 3-15);

a first circuit board (comprising of 42) having a first plurality of circuit pattern 44 in a

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first direction of the matrix;

a second plurality of circuit patterns 54 in a second direction of the matrix;

the first and the second circuit pattern intersecting each other;

a second circuit board carrying an encoder 156 (fig. 8) for generating code signal;

a first flat cable comprising of first conductor 54' connected to the first circuit pattern;

flexible insulator 50 covering the first conductors (fig. 3);

a second flat cable comprising of second conductors (also 54') connected to the second circuit pattern;

flexible insulator 50 covering the second conductor (fig. 3); and

a first connector and a second connector 60 (fig. 6) connecting the first and the second flat cable to the encoder circuit (fig. 8).

Art Unit: 2832

Regarding claim 4, encoder of Montgomery comprises of memory 184 and 182 for storing (fig. 15).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Montgomery.

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Steps claimed in claims 5 and 8 are deemed obvious in view of the functions of the structure in the combination discussed above for Montgomery.

Regarding claim 8, encoder of Montgomery comprises of 182, 184 and 180.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Montgomery in view of Mickievicz et al. (6,171,115).

Montgomery teaches the claimed invention except for mounting the second circuit board to the first circuit board.

Mickievicz teaches a circuit board mounting for the purpose of providing desirable electrical characteristics. Further, mounting provides reduction in circuit board area. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the keyboard device of Montgomery with the circuit board mounting as taught by Mickievicz, since

Art Unit: 2832

the mounting as taught by Mickievicz would provide the device of Montgomery with desirable electrical characteristics and would provide reduced circuit board area.

***Allowable Subject Matter***

6. Claims 2-3 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 2 recites four elongated frame member having slots to accept a flat plate supporting the key switches. Four connecting member connected to two elongated frame form a rectangular support. The claimed support structure of claim 2, in combination with claimed structure in claim 1, are neither disclosed nor suggested by the prior art of record. Claim 3 depends on claim 2.

Claim 6 recites method of producing the claimed support structure, also deemed allowable if incorporated into the base claim 5.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please see the attached PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard K. Lee whose telephone number is (571) 272-1994. The examiner can normally be reached on M-TU & TH-F 5:30AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2832

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Richard K. Lee  
Examiner  
Art Unit 2832

